

Operating Instructions



Coupler Socket

> 8570/16



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2 General Information

2.1 Manufacturer







R. STAHL Schaltgeräte GmbH
Am Bahnhof 30
74638 Waldenburg, Germany

Phone: +49 7942 943-0
Fax: +49 7942 943-4333
Internet: www.stahl.de

2.2 Information Regarding these Operating Instructions

ID NO.: 150663 / 8570609300
Publication Code: S-BA-8570/16-04-en-22/06/2009
We reserve the right to make technical changes without notice.


2.3 Symbols Used

	Action request: Describes actions to be carried out by the user.
	Reaction sign: Describes the results or the reactions to the actions taken.
	Bullet
	Information sign: Describes the notes and recommendations.
	Warning sign: Danger from energised parts!
	Warning sign: Danger due to an explosive atmosphere!

3 General Notes Regarding Safety

3.1 Safety instructions for installation and operating personnel

The operating instructions contain basic safety instructions which are to be observed during installation, operation and maintenance. Non-observance can lead to endangerment of persons, plant and the environment.

 WARNING
Risk due to unauthorised work being performed on the device! ▷ There is a risk of injury to persons and damage to equipment. ▶ Assembly, installation, commissioning, operation and maintenance must only be performed by personnel who are both authorised and suitably trained for this purpose.

Before assembly/commissioning:

- ▶ Read through the operating instructions.
- ▶ Give adequate training to the assembly and operating personnel.
- ▶ Ensure that the contents of the operating instructions are fully understood by the personnel in charge.
- ▶ The national installation and assembly regulations (e.g. IEC/EN 60079-14) apply.

When operating the device:

- ▶ Ensure the operating instructions are made available on location at all times.
- ▶ Observe safety instructions.
- ▶ Observe national safety and accident prevention regulations.
- ▶ Only run the device according to its performance data.
- ▶ Servicing/maintenance or repair work which are not described in the operating instructions must not be performed without prior agreement with the manufacturer.
- ▶ Any damage may render explosion protection null and void.
- ▶ No changes to the devices or components impairing their explosion protection are permitted.
- ▶ Install and use the device only if it is undamaged, dry and clean.

If you have questions:

- ▶ Contact the manufacturer.

3.2 Warning notes

Warnings are sub-divided in these operating instructions according to the following scheme:

 WARNING
Type and source of the danger! ▷ Possible consequences. ▶ Measures to avoid danger.

They are always identified by the signalling word "WARNING" and sometimes also have a symbol which is specific to the danger involved.

3.3 Conformity to Standards

The device complies with the following directives and standards:

- ✗ Directive 94/9/EC
- ✗ IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-7, IEC/EN 61241-0
- ✗ IEC/EN 61241-1
- ✗ IEC/EN 60947-3, IEC/EN 60947-4-1, IEC/EN 60309, IEC/EN 60529

4 Intended Area of Application

The coupler socket 8570/16 is an explosion-protected electrical device.

It serves the connection of portable and fixed electrical devices and for connecting cables or electrical circuits in areas where an explosion hazard exists.

It has an area classification for use in Zones 1, 2, 21 and 22.

WARNING

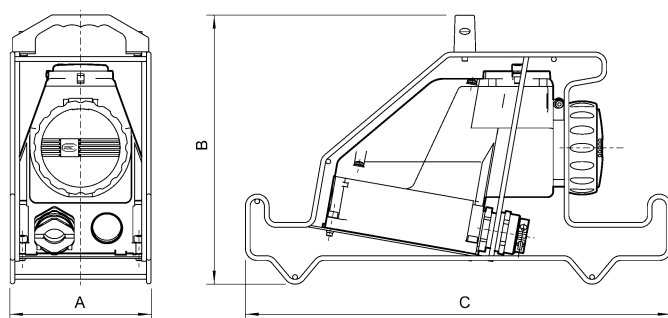
Only use the device for its intended purpose!

- ▷ Otherwise, the manufacturer's liability and warranty expire.
- ▶ The device may only be used under the operating conditions described in these operating instructions.
- ▶ The device may only be used in hazardous areas according to these operating instructions.

5 Technical Data

Explosion protection	
Gas explosion protection	
ATEX	Ⓔ II 2 G Ex de IIC T6
IECEX	Ex de IIC T6
Dust explosion protection	
ATEX	Ⓔ II 2 D Ex tD A21 IP66 T80 °C
IECEX	Ex tD A21 IP66 T80 °C
Ambient temperature	- 30 °C ... + 55 °C - 50 °C on request (internal lubrication with silicone grease)
Certificates	
Gas explosion protection	
ATEX	PTB 03 ATEX 1227
IECEX	IECEX PTB 05.0023
Dust explosion protection	
ATEX	PTB 03 ATEX 1227
IECEX	IECEX PTB 05.0023
Rated operational voltage	max. 690 V AC / max. 110 V DC
Frequency range	0 ... 60 Hz
Voltage tolerance	-10% ... +6%
Rated operational current	16 A
Rated operational power	AC 3 690 V 16 A 4 kW 220 V / 230 V / 240 V 7.5 kW 380 V / 400 V / 415 V / 500 V 11 kW 600 V / 690 V DC1 110 V 16 A
Back-up fuse	
without thermal protection	16 A gL
with thermal protection	35 A gL
Number of pins	2 P + \perp , 3 P + \perp , 3 P + N + \perp
Material	
Enclosure	Polyamide, glass fibre reinforced
Carrier	Stainless steel
Degree of protection	IP66
Connection type	Screw terminals
Connection cross-section	
finely-stranded	2 x 1.5 mm ² ... 4 mm ²
Cable entries	
Stopping plug	1 x M 25 x 1.5
Cable gland	1 x M 25 x 1.5
Cable dia. range	7 mm ... 17 mm
Special version	Cable entries on top and rear side. 1 x M25 metal cable gland (see R. STAHL Catalogue, Chapter 12).
Weight	8570/16-3 2.1 kg 8570/16-4 2.35 kg 8570/16-5 2.45 kg
Service life	5000 switching cycles (electrical and mechanical)
Tightening torque	
Terminals	max. 1.2 Nm
Connection chamber cover	max. 1.8 Nm

Dimensional Drawings (All Dimensions in mm) - Subject to Alterations



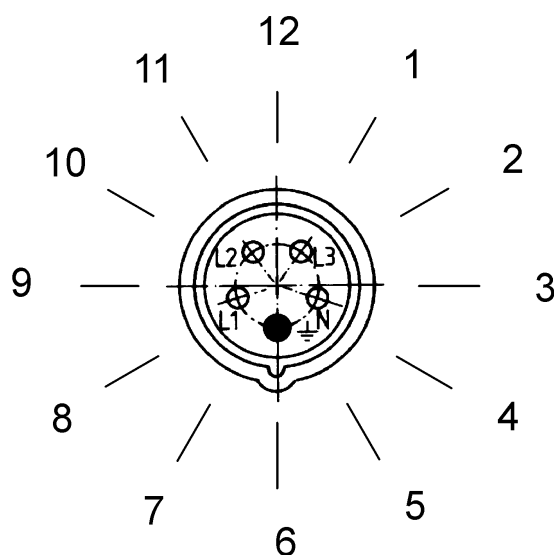
A	B	C
149	249	415

03435E00

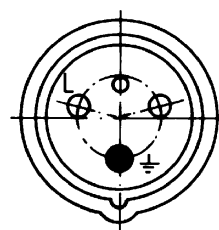
8570/16-... Coupler socket

Position of the protective earth (PE) contact

Position: clock-hour position; View: front face of the socket



Example: clock-hour position



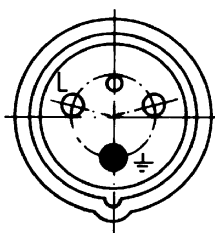
06190E00

250 V = 6 o'clock

02395E00

Contact layout and terminal markings

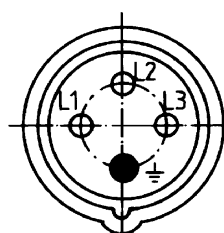
2 P + \perp



06190E00

8570/16-3..

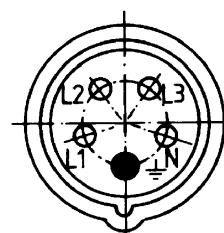
3 P + \perp



06556E00

8570/16-4..

3 P + N + \perp



06555E00

8570/16-5..

Contact layout and terminal markings in the 6 o'clock position (view from the front face of shrouded socket onto the contacts)

Contact layout and identification colour and terminal markings

Number of poles	Frequency [Hz]	Voltage [V]	Identification colour	Position of the PE contact
8570/16-3.. 2P + \perp	50 - 60	110 - 130	yellow	4 o'clock
	50 - 60	200 - 250	blue	6 o'clock
	60	277 ¹⁾	light grey	5 o'clock
	50 - 60	480 - 500	black	7 o'clock
	> 300 - 500 ²⁾	> 50	green	2 o'clock
	DC	> 50 - 110	light grey	3 o'clock
8570/16-4.. 3 P + \perp	50 - 60	200 - 250	blue	9 o'clock
	50 - 60	380 - 415	red	6 o'clock
	60	440 - 460 ¹⁾	red	11 o'clock
	50 - 60	480 - 500	black	7 o'clock
	50 - 60	600 - 690	black	5 o'clock
	100 - 300 ²⁾	> 50	green	10 o'clock
8570/16-5.. 3 P + N + \perp	50 - 60	120/208 144/250	blue	9 o'clock
	50 - 60	200/346 - 240/415	red	6 o'clock
	50 - 60	277/480 - 288/500	black	7 o'clock
	50 - 60	347/600 - 400/690	black	5 o'clock
	60	250/440 - 265/460 ¹⁾	red	11 o'clock

Identification colour and layout in relation to the keyway for the various voltages and frequencies, in accordance with IEC 60309-2.

1) Primarily for installation on board ships

2) Frequencies ≥ 100 Hz lead to increased heating behaviour. This must be compensated for by a max. ambient temperature of ≤ 40 °C, temperature class T5 or a reduction of current to 12 A.

6 Transport, Storage and Disposal

Transport

- Shock-free in its original carton, do not drop, handle carefully.



Storage

- Store in a dry place in its original packaging.
- Storage temperature range: - 55 °C ... + 80 °C

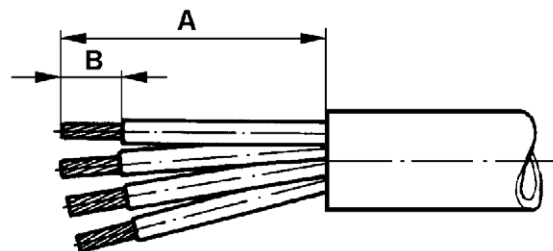
Disposal

- Ensure environmentally friendly disposal of all components according to legal regulations.

7 Installation

⚠ WARNING	
	Danger of explosion! ▷ There is a risk of injury to persons and material damage. ▶ Choose a suitable conductor, so that the maximum permissible conductor temperature is not exceeded. ▶ If using wire end ferrules, fit these in a gastight manner using the appropriate tool. ▶ Only use separately tested cable entry glands and sealing plugs, which have an EC-Type examination certificate. ▶ Conductor insulation must reach right to the terminal. ▶ The conductor must not be damaged (e.g. notched) when stripping the insulation. ▶ Always connect the protective earth conductor.
	 Two conductors can be clamped under a single terminal. Conductor material and cross sectional area must be identical. The conductors can be connected, without special preparatory measures.

	Dimensions [mm]	
	A	B
Main contacts	180	10



11201E00


- ▶ Open enclosure.
- ▶ Pass the cable through the cable entry into the connection chamber.
- ▶ Remove the cable sheathing, such that the cable will still be clamped adequately.
- ▶ Insert stripped cable ends in corresponding terminal and clamp (1.2 Nm). The stripped wire ends must be entirely placed under the clamp plate.
- ▶ Align the wires (clamped ends must be relieved of strain).
- ▶ Tighten the cable gland(s).
- ▶ Close the casing.

8 Commissioning

Before commissioning


- ▶ Check for correct assembly and installation.
- ▶ Inspect the casing for damage.
- ▶ Remove foreign objects if necessary.
- ▶ Clean the connection chamber if necessary.
- ▶ Check that the cables enter the casing correctly.
- ▶ Check-tighten all screws, bolts and nuts.
- ▶ Check-tighten all cable entry glands and sealing plugs.
- ▶ Observe the mains voltage.
- ▶ Seal all cable entries, which are not used, with plugs certified in accordance with directive 94/9/EC and seal all holes, which are not used, with sealing plugs certified in accordance with directive 94/9/EC.
- ▶ Only operate if fully assembled.

9 Operation

	<ul style="list-style-type: none"> ✗ The coupler socket switch can only be operated if a plug is inserted. ✗ When the plug is disconnected, lock the hinged cover with the bayonet ring.
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Only type 8570/12 and 8575/12 plugs, manufactured by R. STAHL, must be used.

10 Maintenance

⚠ WARNING	
	<p>Danger from live parts!</p> <ul style="list-style-type: none"> ▷ Risk of serious injury. ▶ All connections and wiring must be disconnected from the power supply. ▶ Secure the connections against unauthorised re-connection.
⚠ WARNING	
<p>Danger through defective switch contacts!</p> <ul style="list-style-type: none"> ▷ There is a risk of injury to persons and material damage. ▶ The complete flange socket must always be replaced, if a short circuit occurs in the switch's main circuit, as the state of the switch contacts of hermetically sealed devices can not be determined. 	

10.1 Regular Maintenance Work

- ▶ Refer to the corresponding national regulations (e.g. IEC/EN 60079-17) for the type and scope of tests.
- ▶ The maintenance intervals must be chosen, such that the occurrence of deficiencies, anticipated in the system, can be avoided.
- ▶ The plug must be disconnected at regular intervals, to prevent contact corrosion.


The following items must be checked as part of the maintenance schedule:

- ✗ Check that no cable connections are loose.
- ✗ Inspect the casing for visible signs of damage.
- ✗ Check that the permitted temperatures, in accordance with IEC/EN 60079-0, are adhered to.
- ✗ Check that female contacts are clean.
- ✗ Inspect seals for damage.
- ✗ Check that the device functions correctly.
- ✗ Check that surfaces of the plug pins are not damaged.

10.2 Cleaning

- ✗ The device may only be cleaned with a damp cloth!
- ✗ When cleaning with a damp cloth use water or mild, non-abrasive, non-scratching cleaning agents.
- ✗ Never use aggressive cleaning agents or solvents.
- ✗ Avoid the ingress of water or cleaning agents into the female contacts.

11 Accessories and Spare Parts

Designation	Illustration	Description		Order number	Weight kg
Sealing plugs	 04840E00	8290/3-M 25 x 1.5	1 piece	143524	0.007

12 EC Type Examination Certificate

12.1 EC Type Examination Certificate (Page 1)

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin



(1) **EC-TYPE-EXAMINATION CERTIFICATE**
(Translation)

(2) Equipment and Protective Systems Intended for Use in
Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 03 ATEX 1227



(4) Equipment: Plug-and-socket device, type 8570/...-

(5) Manufacturer: R. STAHL Schaltgeräte GmbH

(6) Address: 74638 Waldenburg (Württ.), Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 04-13432.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997 + A1 + A2
EN 50281-1-1:1998

EN 50018: 2000

EN 50019: 2000

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G/D EEx ed [ia] IIC T6 IP 66 T80 °C

Zertifizierungsstelle Explosionsschutz

Braunschweig, March 24, 2004

By order:

Dr.-Ing. U. Klausmeyer
Regierungsdirektor



sheet 1/3

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig



12.2 EC Type Examination Certificate (current supplement)

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin



1st SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 1227

(Translation)

Equipment: Plug-and-socket device, type 8570/.....

Marking:  II 2 G EEx ed [ia] IIC T6
II 2 D IP 66 T 80°C

Manufacturer: R. STAHL Schaltgeräte GmbH

Address: Am Bahnhof 30
74638 Waldenburg (Württ.), Germany

Description of supplements and modifications

The plug-and-socket device, type 8570/....., may be manufactured with the following modifications:

- The wall-mounting socket outlet, mounted in a basket guard, is designed as a portable socket outlet.
The type name for this version is: 8570/6-...
- The cable entries used may also be of a type permitting mobile applications as certified under a separate test certificate. The screw threads are mounted with interference fit, using a tool.
- The inner contour line of the switch element has been modified.
- Alternative materials are used for the plug-and-socket device.

Applied standards

EN 50014: 1997 + A1 + A2
EN 50020: 2002

EN 50018: 2000 + A1
EN 50281-1-1:1998

EN 50019: 2000

Test report: PTB Ex 05-15305

Zertifizierungsstelle Explosionsschutz

By order:

Dr.-Ing. M. Thedens
Regierungsrat



Braunschweig, February 10, 2006

Sheet 1/1

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Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig, Germany



EG-Konformitätserklärung
EC Declaration of Conformity
Déclaration de Conformité CE



R. STAHL Schaltgeräte GmbH • Am Bahnhof 30 • 74638 Waldenburg, Germany
erklärt in alleiniger Verantwortung, declares in its sole responsibility, déclare sous sa seule responsabilité,

dass das Produkt:
that the product:
que le produit:

Steckvorrichtung
Plug and socket
Prise de courant


Typ(en), type(s), type(s):

8570/1*-***

mit den Anforderungen der folgenden Richtlinien und Normen übereinstimmt.
is in conformity with the requirements of the following directives and standards.
est conforme aux exigences des directives et des normes suivantes.

Richtlinie(n) <i>Directive(s)</i> <i>Directive(s)</i>	Norm(en) <i>Standard(s)</i> <i>Norme(s)</i>
94/9/EG: ATEX-Richtlinie 94/9/EC: ATEX Directive 94/9/CE: Directive ATEX	EN 60079-0:2012 EN 60079-1:2007 EN 60079-7:2007 EN 60079-11:2012 EN 60079-31:2009

Kennzeichnung, marking, marquage:

 II 2 G Ex d e IIC T6 Gb
II 2 G Ex d e [Ia Ga] IIC T6 Gb
II 2 D Ex tb IIIC T80°C Db

CE 0158

EG-Baumusterprüfbescheinigung:
EC Type Examination Certificate:
Attestation d'examen CE de type:

PTB 03 ATEX 1227
(Physikalisch-Technische Bundesanstalt,
Bundesallee 100, 38116 Braunschweig, Germany, NB0102)

Produktnormen nach Niederspannungsrichtlinie:
Product standards according to Low Voltage Directive:
Normes des produit pour la Directive Basse Tension:

EN 60309-1:1999+A1:2007+A2:2012
EN 60309-2:1999+A1:2007+A2:2012
EN 60309-4:2007+A1:2012

2004/108/EG: EMV-Richtlinie
2004/108/EC: EMC Directive
2004/108/CE: Directive CEM

Nicht zutreffend nach Artikel 1, Absatz 3.
Not applicable according to article 1, paragraph 3.
Non applicable selon l'article 1, paragraphe 3.

Spezifische Merkmale und Bedingungen für den Einbau siehe Betriebsanleitung.
Specific characteristics and how to incorporate see operating instructions.
Caractéristiques et conditions spécifiques pour l'installation voir le mode d'emploi.

Waldenburg, 2014-09-19

Ort und Datum
Place and date
Lieu et date

i.V.


Steffen Buhl
Leiter Entwicklung Schaltgeräte
Director R&D Switchgear
Directeur R&D Appareillage

i.V.


J.-P. Rückgauer
Leiter Qualitätsmanagement
Director Quality Management
Directeur Assurance de Qualité

